COAL MINING

September, 1961

Volume 38, No. 9

NEW Completely Transistorized M-S-A® Model E-60 MinePhone®

Here's the first mine communications system fully protected against power failure

Power failures can't knock out the rugged M-S-A E-60 MinePhone.

Always operative, power comes from the storage battery, on constant charge from the trolley. Takes only *one watt* of battery energy to ready the MinePhone for standby transmission or reception. In event of power failure, you still have hours of service from the fully charged battery. As power is restored, battery is automatically recharged.

The compact transistor makes possible a 35% reduction in size of this new transmitter/receiver. There are no vacuum tubes to wear out. No damage due to vibrations.

Consider these safety factors: the E-60 MinePhone — needing no warm-up period — permits instant reporting of hazardous mine conditions. Scheduling is more efficient. And in case of emergency you can alert both surface and mine personnel — keep them tuned in — even when trolley power is off.

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Your MSA representative would be pleased to discuss your actual communication requirements. Call him soon. And write us for free product data bulletin. Mine Safety Appliances Company, Pittsburgh 8, Pa. In Canada: Mine Safety Appliances Co. of Canada, Ltd., 500 MacPherson Ave., Toronto 4, Ontario.

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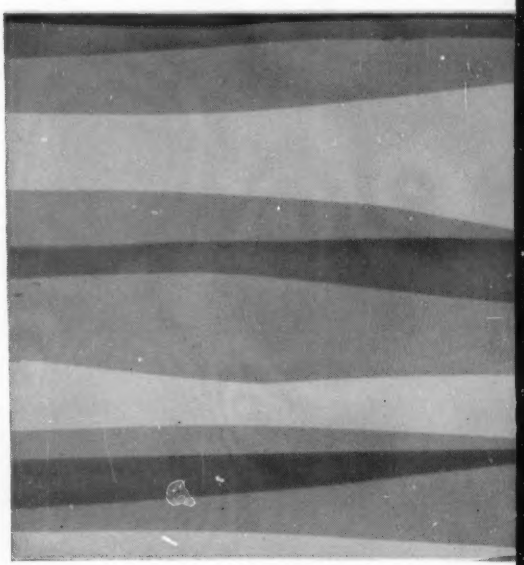

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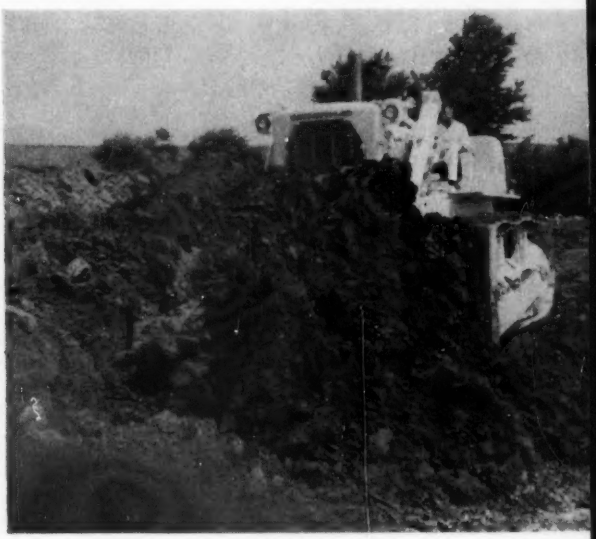

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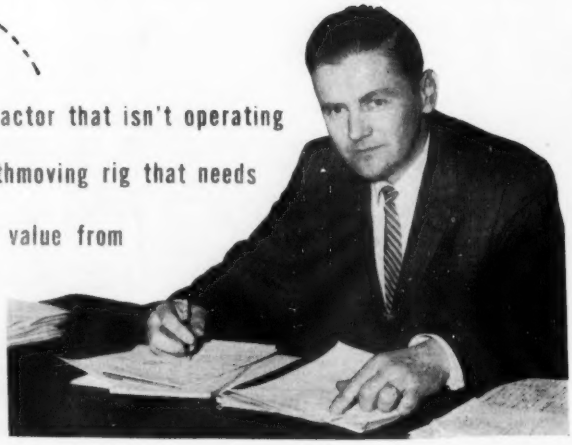

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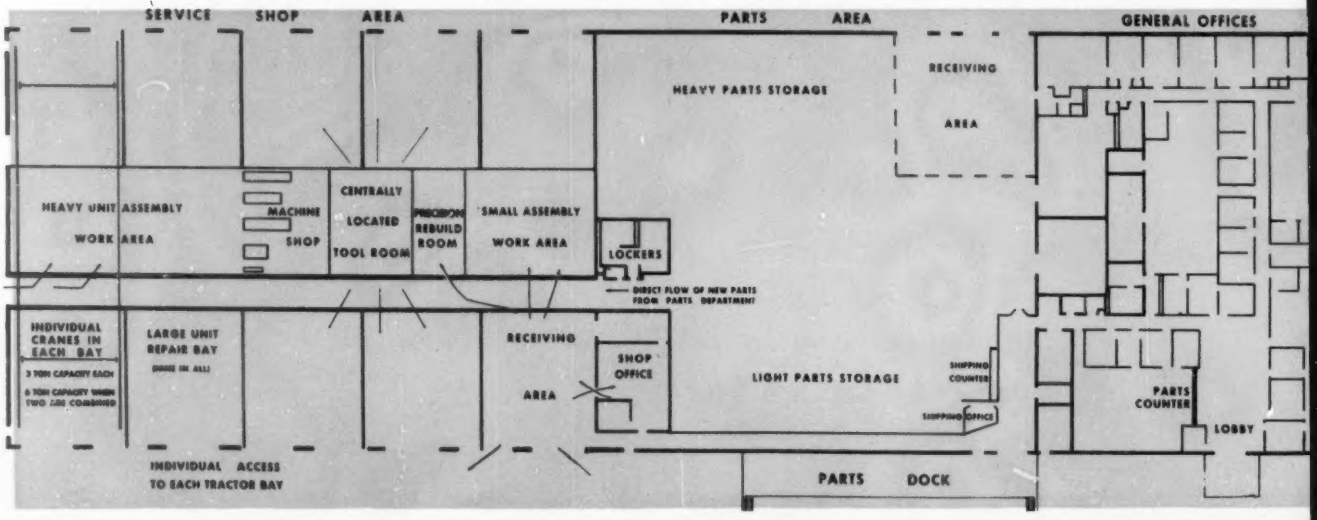

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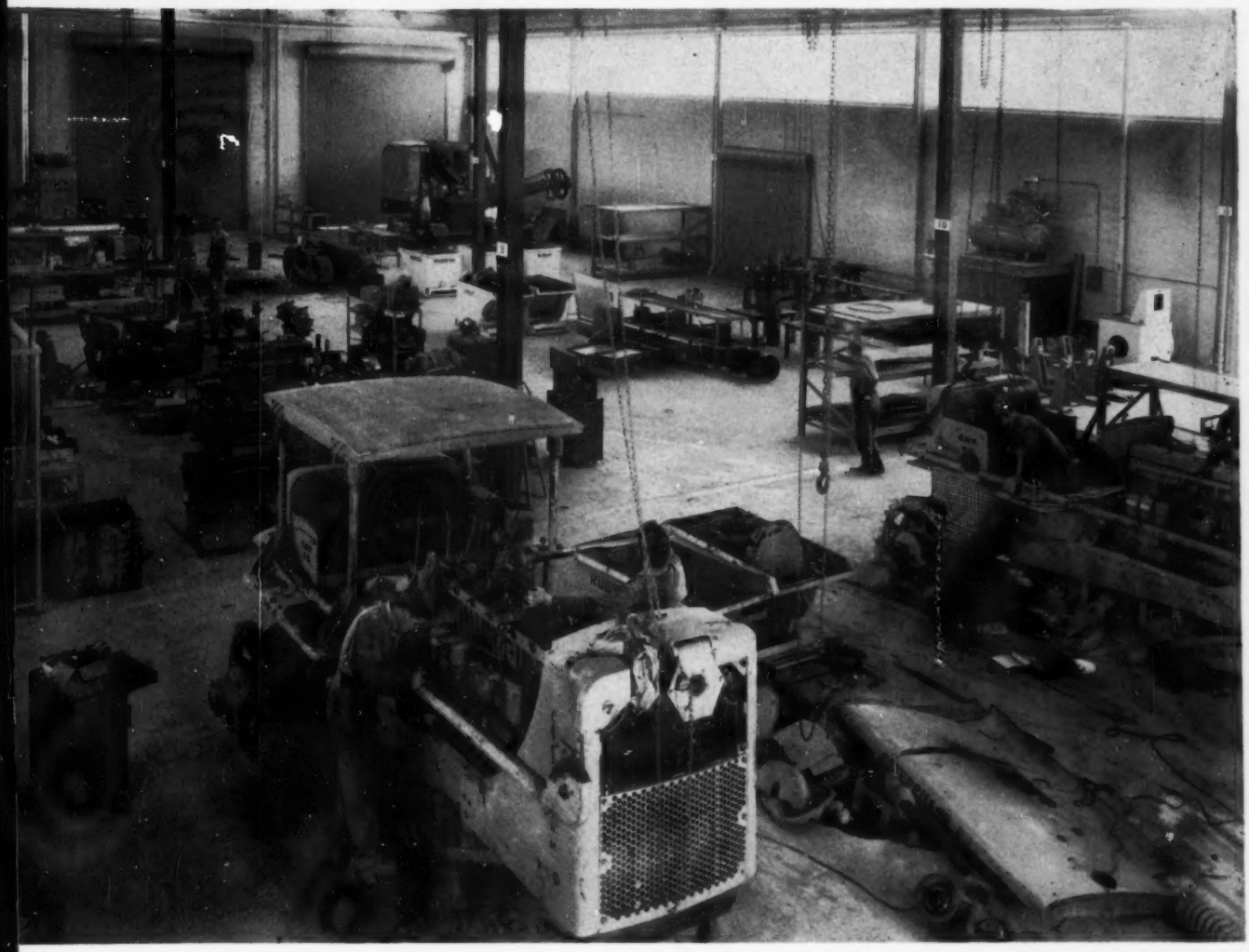

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P & N Coal Company uses the new Hydraulic lift-blade in removing overburden at NSU Punxsutawney, Pa.

This C-6 owned by Frank M. Sheesley Company cuts and grades swamp area on a new high school project near Dubois.

C. J. Langenfelder's C-6 cuts and grades fill for new roadbed of Lake Erie & Pennsylvania railroad relocation.

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WHITE MANUFACTURING CO.

● Completion of an expansion program which doubles productive capacity of its metallic clutch plates, facings and brake block divisions, was announced recently by the S. K. Wellman Company, Bedford.

These products, which Wellman pioneered and of which it is the world's largest manufacturer, are widely used in trucks, construction and farm machinery, aircraft and industrial equipment.

At the same time, Robert W. Biggs, president, advised that the firm is now taking steps to substantially increase its output of Velvetouch Metalik all-metal brake linings for passenger cars. The latter were introduced four months ago in a test campaign in Los Angeles. However, unanticipated large nation-wide volume, occasioned by word-of-mouth advertising and orders by users of other Wellman products, has to date made it impossible to fully meet customer demand, Mr. Biggs said. He stated that 60,000 sq. ft. of additional Bedford plant space is now being placed in use. This brings total production area there to over 300,000 sq. ft.

Other expansion is being undertaken in Canada where a 7,500 sq. ft. section is being added to the Toronto factory. The company has also recently acquired space in a 21,000 sq. ft. warehouse and distribution center in San Francisco. Other warehouses are in Atlanta, Chicago, Dallas, Denver, Los Angeles, Philadelphia and Portland.

These space expansions plus improvements in manufacturing techniques make it possible for us to guarantee users we can now meet all their requirements fully and rapidly, Mr. Biggs said. "We now have facilities to make virtually unlimited quantities of all types of iron base friction materials."

● W. J. Shields has been elected vice president-operations of Rochester & Pittsburgh Coal Co., Indiana, Pa. Mr. Shields has been with the company since graduation from the College of Mineral Industries of The Pennsylvania State University in 1935,

Do You Know?

• A "seeing-eye" machine used to sort checks in banks throughout the country is winning for its inventor the 3,000,000th U. S. patent.

The event marks another milestone in the history of the patent system and of technological growth in the United States. The country, a land of inventors and basement putterers, has vaulted into position as the world's leading industrial power with a big push from the U. S. patent system.

Throughout U. S. history, such names as Edison, Ford, Eli Whitney and the Wright brothers have sprung up among the patents, illustrating why the United States has acquired its reputation for "Yankee ingenuity." The favorable effect of the patent system spurred Abraham Lincoln to state that "the patent system added the fuel of interest to the fire of genius."

The U. S. patent system is one of the Government's oldest activites, dating back to the founders of this country. The far-sighted framers of the Constitution, realizing the importance of an inventor, included the provision that Congress shall "promote the progress of science by securing for limited times to authors and inventors the exclusive right to their respective writing and inventions."

The first U. S. patent was granted in 1790 for an improvement in "the making of Pot ash and Pearl ash by a new Apparatus and Process."

Since then, an endless procession of inventions has opened successive chapters in the nation's rapidly developing technology. The great American textile industry sprang from Eli Whitney's cotton gin invented in 1794. The McCormick reaper of 1834 opened up the vast grain fields of the "golden" West to help feed the expanding population. The "Revolving Gun," the first six-shooter patented by Samuel Colt, helped win the West for pioneers.

Samuel F. B. Morse's telegraph (1840) and Charles Goodyear's vulcanized rubber process (1845), that marked the birth of rubber industries bridged the gap from early 19th century and brought the country to the late 1800's — the "Golden Age of Inventors."

This was the era of Bell's telephone, Edison's light bulb and phonograph, Marconi's wireless telegraph, Mergenthaler's linotype and many other important inventions. Confirmed and protected by the patent system, the inventions transformed America from an agricultural to an industrial nation.

HERE AND THERE IN THE COAL INDUSTRY

Wade E. Canfield

• Election of Wade E. Canfield to the board of directors of the S. K. Wellman Company, Bedford, is announced by Robert W. Biggs, president.

Mr. Canfield, affiliated with the firm since 1936, has been vice president in charge of sales since 1941. He is also president and a director of the S. K. Wellman Company of Canada, Ltd., Toronto.

An alumnus of Western Reserve University, Mr. Canfield is a director of Friction Materials Standards Institute, New York City. He is a member of the SAE and numerous professional societies.

The S. K. Wellman Company is a pioneer manufacturer of metal clutch plates, facings and brake blocks. It is said to be the world's largest producer of these products for motor trucks, construction and farm machinery, aircraft and industrial equipment.

• Fred B. Bullard was named president of the Kentucky Coal Association, succeeding B. F. Reed, who was elected chairman of the board. Other officers elected were Joseph H. Lyons, secretary-assistant treasurer, and James R. Love, treasurer. Mr. Bullard is also executive secretary of the Hazard Coal Operators Association, and Mr. Lyons is administrative secretary of the Big Sandy-Elkhorn Coal Operators Association. They will handle the administrative functions of the Hazard and Big Sandy groups from new Kentucky Coal Association offices at 137 East High St., Lexington. New directors of the Kentucky Coal Association, in addition to Mr. Reed, are George E. Evans, Jr., Russell Harman, H. B. Jones, R. D. Jones, Harry LaViers, C. D. McDowell, Roland P. Price, Joseph Stras, William B. Sturgill, Dr. Frank C. Thomas, Cecil H. Underwood, R. V. Venable and B. W. Whitfield III.

• The Kentucky Reclamation Association elected a new board of directors and officers at its annual meeting in Earlington, Ky. Board members elected are: Russell Badgett, Jr., Russell Badgett, Jr. Coal Co.; James Deane, Peabody Coal Co.; O. E. May (Paradise Mine) and James Miner (Colonial Mine), Pittsburg & Midway Coal Mining Co.; O. N. Ranney, Riverview Coal Co.; James Sigmon, Sigmon Coal Co., Inc.; Bradley Sparks, River Queen Coal Co.; William Sturgill, Pine Bluff Augering Co. and Mountain Top Stripping Co.; R. H. Swallow, Gibraltar Coal Corp.; and Jesse O. Williams, Hart and Hart. Officers elected by the board are Mr. Williams, president, Mr. May, vice president, and Mr. Ranney, secretary-treasurer. John M. Crowl is executive director.

The new Model 725 Page dragline in operation.

Looking into the pit, showing alluvial cover which will slide onto stripped coal in wet weather.

Ten Yard Dragline At In Northwest

Coal deposits in Northwest Pennsylvania have been covered with loam mixed with sand and gravel, resulting from glacial wash. Stripping operations in a large part of the area are started by box cut. The present operation of the Perry-Ross Coal Company lies near the town of North Liberty, in Lawrence County. The alluvial type overburden on the coal seams in Northwestern Pennsylvania, as a rule, can be stripped without shooting. However, large bolders or layers of hard rock are encountered occasionally.

Keeping up with progress, the Perry-Ross Coal Company recently installed a new Model 725 Page Dragline with 150 foot boom and 10 yard bucket which makes a stripping cycle about every 45 seconds in coverage averaging 40 feet thick. Displacing an older model dragline with 3½ yard bucket and 80 foot boom, this new dragline is uncovering 3 times as much coal. Surface grading for the new dragline is done with an A-C H D-21 tractor.

Top right: Drilling hard rock encountered on the seam of coal.

Center right: The 4-inch Gorman-Rupp dewatering pump, driven by Lister Diesel engine.

Bottom right: I-H Model TD-24 backfilling spoil.

Perry-Ross Coal Company
Pennsylvania

A layer of hard rock lying directly on the coal has been encountered which must be drilled and shot for moving. Shot holes are made with rock drills driven by a Jeager 125 cfm compressor. The pit is drained by 2 two inch Jeager pumps while drilling is being carried on. Other pumping is done with 3 four inch pumps, one being a Gorman-Rupp pump driven by a Lister Deisel engine.

The Lower Kittanning seam of coal is being recovered, running 24 to 30 inches thick. The coal is loaded with a Bucyrus-Erie Model 38 shovel having 1¼ yard dipper.

Lying in more or less flat country and requiring box cut to reach the coal, spoil banks are backfilled to their original contour.

The Perry-Ross Coal Company has another operation near Forrestville at which it uses a Bucyrus-Erie Model 51-B shovel to strip the Middle Kittanning coal, running 31½ feet thick. There the coal is loaded with a Bucyrus-Erie Model 22-B shovel.

How To Develop a Good Bonus Plan

A bonus plan can contribute to the profit in your business, or it can be a profit drain. Check this plan for developing a good bonus plan for your coal business.

By Paul Lockwood

Top management is taking a close second look at bonus plans today. Past plans are being modified to meet changing needs. Bonus-free firms are adopting this extra compensation plan to meet competition and to improve profits.

Here is a program you can follow to review and evaluate your present bonus plan or to establish a bonus plan that will be successful:

1. DETERMINE BONUS GOAL

Any plan of business action needs an objective. You can set up several goals for your bonus plan, or you can concentrate on only one specific objective. For instance, your bonus goal might be:

1. To provide greater incentive for more work from your employees.
2. To improve the morale of everyone in your organization and to develop a spirit of teamwork.
3. To control payroll expense through the adjustment of your bonus payments to your profit picture.
4. To develop a sense of loyalty on the part of employees and to reduce recruiting and training expenses.

Your bonus plan can provide for incentive to accomplish more. If you establish this type of bonus plan, you will need to let everyone know in advance what is expected and to give some indication of the reward for achieving the best results.

When everyone in the organization shares in the bonus based on the profit for the year, you will develop a spirit of teamwork. Everyone will be working together to improve profits so there will be a bigger bonus to divide at the end of the year.

A bonus plan that is not static —equal each year—is not apt to be considered a part of the regular compensation. Thus, you can hold the line on your payroll expense—reduce the bonus when profits dip or increase it when profits rise.

There is an undetermined expense of recruiting and training new employees. This cost can be drastically reduced when a bonus plan is based on length of service. Loyal employees think more than once about making a job shift when the bonus plan is tied in with length of employment.

2. EXPERIMENT WITH BONUS PLANS

Until your bonus plan has been tested, you will find it best to keep it among a sma'l group of employees. Usually this is for employees who have reached a senior status for number of years of employment, or for people who have positions of more responsibility.

When you have ironed out all the wrinkles in your bonus program, you can extend it to other members of your organization. However, care should be exercised that you do not have to cut the bonus payments for those included during the experimental stage when it is extended to everyone.

If you are careful in selecting the group for the test of the bonus plan, you will find that others will be ready and anxious to participate in your bonus. It will give the bonus a certain status in the eyes of your employees—length of service or higher position.

3. KEEP YOUR BONUS SIMPLE

Complicated formulas can be developed for determining the amount of the bonus to pay each employee. These formulas can take into consideration all factors that need to be considered—length of service, current salary, contribution to profits, attitude toward your firm, etc.

However, when it is necessary to make some adjustment in the amount of the bonus, a complicated formula only adds to the problem. Or, if you want to recognize a new employee who has great potential, or to penalize a senior employee who is loafing, a complicated formula will not fit these situations.

Another danger of the complicated bonus formula is that the amount given to the employee may lose some of its appeal. For instance, giving a waiter a 10% tip of 93 cents on a dinner check of $9.25 will indicate you made a serious calculation that was not generous . . . a $500 bonus is better than a bonus of $496 or for $512.

When the employees know how the bonus is calculated, it should be simple and easy to understand. The more complicated the calcula-

tions, the more danger there is for error or for misunderstanding. Keep your bonus formula simple so everyone will be happy with the results—including the person who needs to make the bonus calculations.

4. EXPLAIN BONUS THOROUGHLY

After you have experimented with the bonus plan and eliminated all trouble spots, you are ready to present the plan to the employees. This should be explained thoroughly so they understand it and will not be surprised or disappointed when the bonus payment is made at the end of the year.

In your explanation of the bonus plan, you will want to stress the fact that this is not a program that will continue during good times and bad. Explain that it is based on profits and on contribution to profits. Point out that there will be differences in the amount of the bonus distributed. Show the basis for the calculations and keep this explanation as simple as possible.

When your employees know how the bonus is calculated, how and when it is to be paid, they will work to achieve the goals established. However, in your explanation you want to be sure that you give equal weight to all aspects of the program. If you don't, your employees will concentrate on one goal and slight another because they feel it does not apply to the bonus.

5. KEEP BONUS PAYMENTS REASONABLE

Naturally, employees appreciate getting large bonus checks. It is extra money. But, if the amount gets too large, they are apt to consider it as part of their salary and look on it as a continuing program. Trouble will develop if the bonus payments need to be reduced for any reason at some future time.

A bonus that is high in relationship to salary will lead to another problem. Some employees will feel that it is a way to hold back part of their salary until the end of the year. They would rather forget about the bonus and to have it as an increase in salary that they get each pay day.

A bonus plan that runs to 40% or 50% of salary is too high. Something in the neighborhood of 10% to 25% is better and will eliminate the problems outlined.

6. KEEP BONUS RECORDS

If your employees know that you usually determine the amount of the bonus at a certain time, they will be careful to meet the requirements during this period. However, in other periods of the year they will not be motivated to do a good job.

This is obvious when the bonus is paid at year end. Just before the end of the year, employee morale will improve. When it is known that the bonus has been determined, things will go back to normal.

When you keep week-by-week or month-by-month records, you will find it easier to calculate your bonus. You will know you are being fair to everyone—not forgetting something unusual early in the year and not putting undue emphasis on some recent event to raise or lower the bonus.

7. KEEP EMPLOYEES POSTED

If your bonus program is a share of the profits, it is wise to let your employees know the profit standing periodically. If the profits are up they feel enthused and will work harder. Or, if profits are down, they will work to bring this figure up to a better level.

When you are following the suggestion of establishing a bonus fund, you can keep your employees informed of the current standing of this fund. You can make a comparison with the amount of the fund on this date last year and its current standing to provide more interest and greater incentive.

8. ORGANIZE A BONUS COMMITTEE

You may find it a good plan to bring in some of your employees in making the final decision about the bonus distribution. Naturally, you will want to avoid any feelings of personal prejudice that might develop in the evaluation of other employees for their participation in the bonus by some members of the committee.

Generally, you will find that it is best to have people on an upper level serve on your bonus committee. These people make their recommendations for the people under their supervision—not for themselves or for others on the same management level.

9. ESTABLISH A BONUS FUND

Regardless of the size of the business, bonus payments can be a drain on available cash when made. This may be a factor in deciding on the amount of the bonus and will not have any bearing on the total profit picture or the contribution of your employees. A year-end bonus may be made at a time when the cash position is good and hence be extra generous—or when the cash position is low and not be fair to the employees.

When you establish a bonus fund, you contribute to this periodically on the basis of profits. This money is set aside for making the bonus payments at year end. And, it can provide information to pass along to your employees to keep interest and enthusiasm high all through the year.

10. PERSONALIZE BONUS PAYMENTS

Bonus payments can be made in a very impersonal way—a check distributed with no indication of what it is for. Or, you can personalize your bonus payment with a brief letter that explains how happy you are to give them this bonus. If the letter can be further personalized with some mention of a specific accomplishment of the employee during the bonus period, it will be more appreciated and more than likely lead to a repeat performance next year.

Check your present or proposed bonus plan with these ten points to make it a profit builder instead of a profit drain.

Holding On To That Good Foreman

By Ernest W. Fair

"You know, there's one thing I envy about a certain competitor of mine," a coal company executive told us recently, "and that is the cracker-jack staff of foremen he has—men who have been with him for many, many years."

"With our business here it seems like we are constantly training new foremen and when we do get a really good one sooner or later we lose him. There must be something wrong with the way we are doing things but I can't figure out what it is."

There is indeed something very wrong with this executive's methods of handling his foremen. Since he has been very careful about major factors it is fairly certain that his troubles rest with overlooking a number of mighty important "little things."

We have asked a number of other executives, noted for low changeover on their staffs, about these overlooked factors, i.e., small things which can be neglected in the daily hectic grind of any company operation.

Without exception we were told that none of these are of any importance if there exists a wide discrepancy in the base of pay between one's firm and that of competition. No other step one may take can have any value if this situation exists. Where it does one can be very certain that all of one's time is going to be spent in looking for good men and training them for one's competitors!

But where such a situation does not exist little things can be mighty important. Here are some to check when we have become convinced it is well worth the effort in order to hold onto those good foremen.

Don't ask things of them the competition is not—the good man is always welcome to the staff of any of our competitors and we should never let this fact slip our minds. If we demand a lot of extra things from him that he isn't going to have to put up with elsewhere he will surely snap up the first opportunity offered him.

"It may seem silly to you why I left that firm," Joe S——— told us the other day, "but I just plain got fed up with their asking me to do a million things they should either have been doing themselves or hired someone else to do. I feel a foreman's job is to run his spot right and that's all."

Develop more personal contact with each foreman—any individual is going to feel more loyalty to the firm if that exists than where he is just another name on the payroll. "I like this firm because you know you're wanted, that they have some respect for you," Tom M——— said when we asked him about it, "and you know something else—they make even the newest man on the staff feel important around here. When you are made to feel you are a part of the company it is pretty hard to break away."

Get the men to help him do his job — No foreman can be expected to do his job efficiently if he must continuously cope with inefficient workers. "Did you ever try to get a job done with men who hadn't the slightest idea how to do anything out of the usual that arose?" George W——— asked us when we inquired why he changed firms. "That's what happened with the other company. The plant management had the idea a foreman's job was to take just anybody it sent along and get the work done. If I have to spend most of my time training men how to do their work on the job I certainly cannot deliver an efficient performance for any firm, and besides—it wears on a foreman's nerves too much."

Give your foremen a chance to relax and enjoy their work— The old idea that the only way to get anything out of one's staff was to constantly ride herd over them with a bullwhip is all wrong. Getting any job done profitably these days is tough enough without having to do it under constant pressure. Some of that is necessary, of course, but don't overdo it —that is a sure way to send our good foremen to a competitor's staff.

Don't ever let a foreman down— "The foreman is always wrong at that firm," Henry D——— told us, "So how can any good one stay with them? Whenever any disagreement arises with the men working on the job, inspectors, union officials or anybody else, the foreman is made an arch villian to those people by that management. Where I am now these situations are handled as misunderstandings on the part of all concerned and the boss helps us to work things out with the other people so we keep their goodwill, and —what's highly important, our own self esteem."

Develop some long range planning for the foremen— The man who has something good to look forward to with any firm is less likely to leave for a competitor than the one who can see nothing but the same old routine ahead of him.

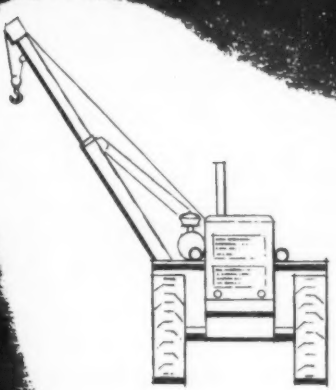
Supply the needed modern equipment— Ever try to do any job with old fashioned or inadequate equipment? Few are the executives who would attempt their own chores with such aids. But far too many are the men who expect their foremen to do the jobs with old and antiquated equipment.

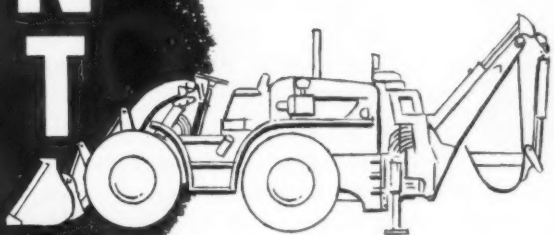
Doing everything one can to put variety into the work of any foreman is a must. Our work can, in all honesty, become a mighty dull routine under certain circumstances. "I left that firm because the management became convinced one man should handle one job, year after year," David D——— tells

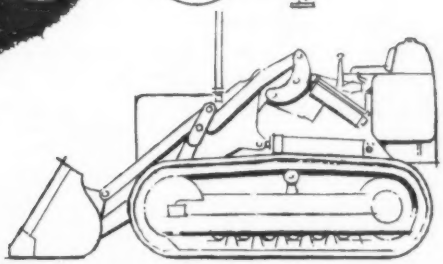
(Continued on Page 23)

ATTACHMENT CATALOG

TOOLS THAT INCREASE THE VALUE OF CAT-BUILT LOADERS



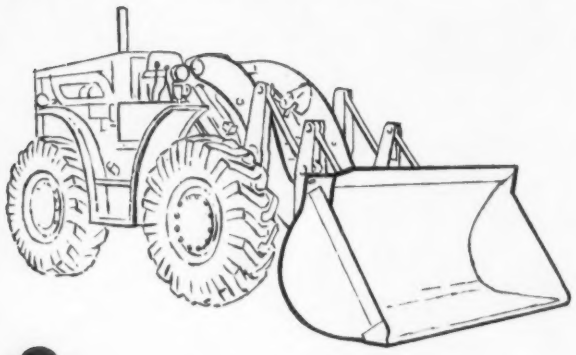




Are you overlooking the work potentials for Traxcavator track-type and wheel Loaders that can be found in the many attachments available from your Caterpillar Dealer? Turn the page to find out how to equip those machines for many specialized profit-earning jobs.

OF WAYS TO PROFIT

1. Start with a Cat-built Loader...

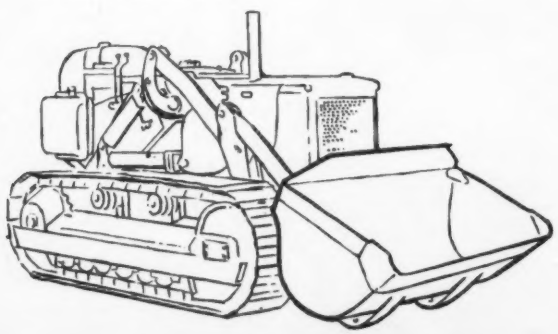


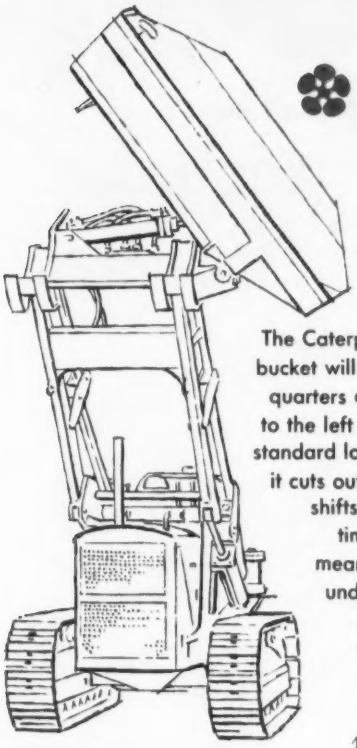
CAT WHEEL LOADERS

A Cat 922, 944 or 966 wheel Loader is built with enough structural stamina, hydraulic snap and just plain strength to handle straight loading jobs or special jobs using profit-boosting attachments. Chassis and loader frames, for instance, feature all-welded, unit construction—the sturdiest platform possible for any mounted tool. Caterpillar's live-action hydraulics bring speed and power to loader mechanism and attachments . . . and there's no hydraulic fade. Turbocharged Cat Diesel, with precombustion chamber design, responds quickly to all power demands.

CAT TRACK-TYPE LOADERS

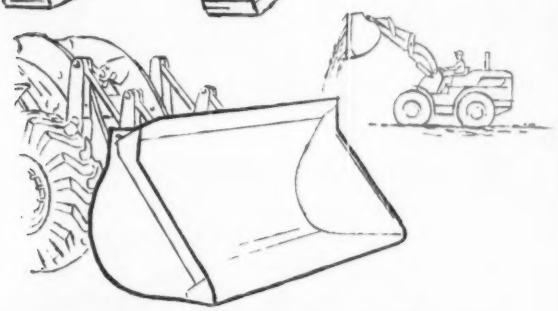
Cat-built Loaders on tracks—the 933, 955 and 977—also are designed to handle attachments with ease. The 955 and 977 are power shift equipped to speed production and maneuverability. And they're all balanced to take a variety of tools—tools which add to the number of jobs they can do and increase their versatility as excavator-loaders.





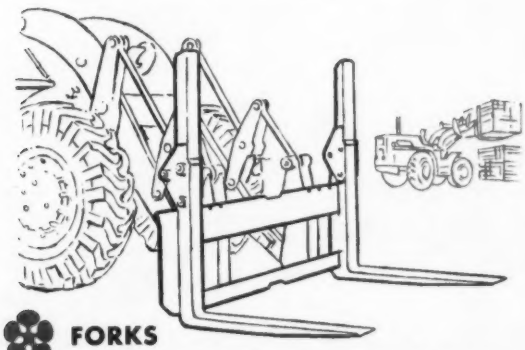
SIDE DUMP BUCKET

The Caterpillar Side Dump bucket will work in tightest quarters and dump either to the left or forward. In a standard loading operation it cuts out two directional shifts, speeding cycle times. Less turning means longer tire or under-carriage life. Available for all wheel and track-type loaders.



LIGHT MATERIALS BUCKET

For high production handling of light weight bulk materials, special buckets with 30% to 50% greater capacity are available for all Traxcavator Loaders. Your Caterpillar Dealer can also fabricate special buckets to meet your needs.

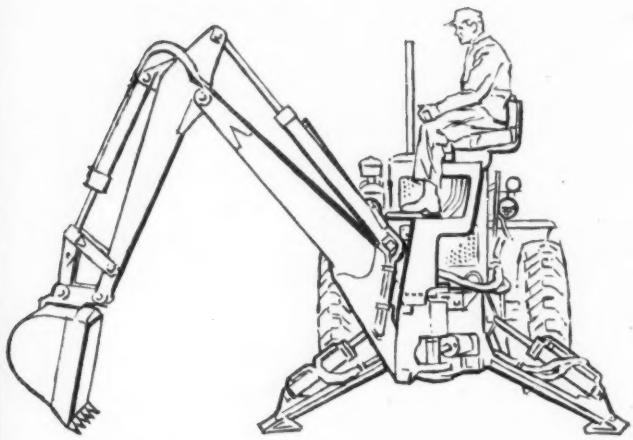


FORKS

Handle logs, lumber, poles, or palletized material with Cat lift forks. Hydraulic top clamp and pulpwood forks also available. They hinge into loader arms with same fittings as the bucket; you can switch from loader to fork-lift in less than 30 min. Available for all track and wheel loaders.

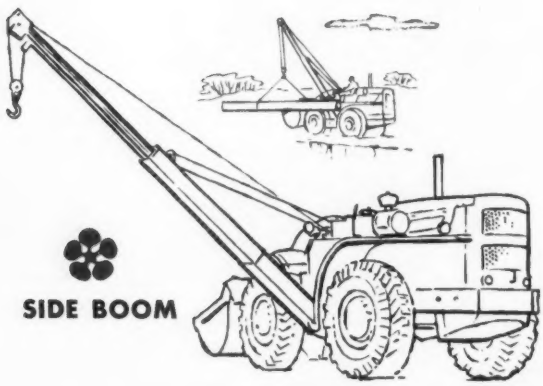
CAT-BUILT LOADERS—

2. Balanced for rear-mounted tools



REAR-MOUNTED BACK HOE

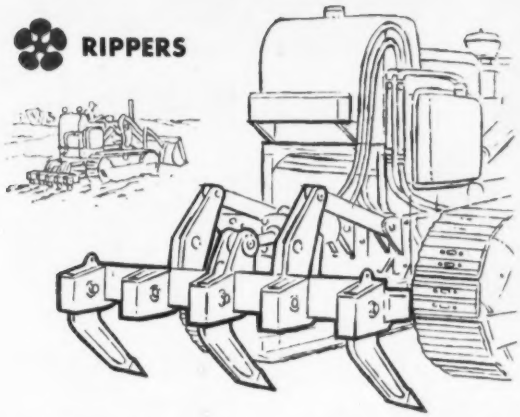
A back-hoe attachment can add a new dimension of usefulness to Cat wheel Loaders. With digging depths over 12′, swing 180°, reach over 15′, back-hoe attachments are available for all wheel and track-type loaders. A snap-on, snap-off arrangement or a permanent type of mounting is available.



SIDE BOOM

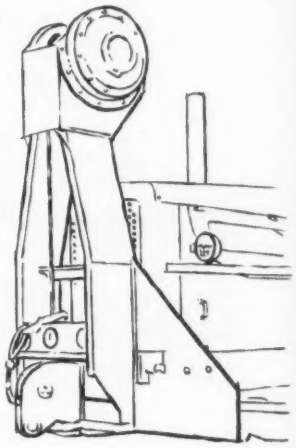
For pipeline jobs that require the mobility of a wheel loader, you can't beat the usefulness of this side-boom attachment. Boom telescopes hydraulically and boom and hoist cables are controlled by hydraulic drums, front-mounted in full view of the operator. Maximum lifting capacity for the 966 is 16,000 lb.—14,000 lb. on the 944.

RIPPERS

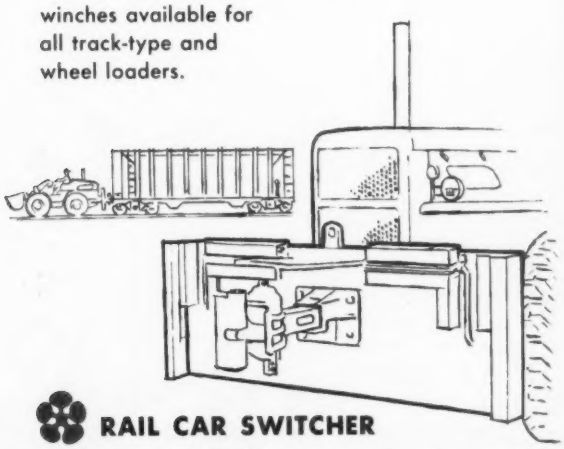


Rear-mounted rippers, matched to the weight and power of the three track-type loaders, speed any tough excavating job. They will rip paving, blacktop and other tough materials. Penetration is from 9 to 14 inches. Parallelogram suspension of beam insures proper ripping angle for shanks at any depth.

WINCHES



Hydraulic winches are available for all three Cat wheel Loaders. With plenty of power available from the hydraulic system, these winches are an excellent utility tool. They have a 15,000 lb. hook load capacity—with winch line speeds from 19.5 ft. per min. to 38 ft. per min. Either low or high mounts can be used—winches available for all track-type and wheel loaders.

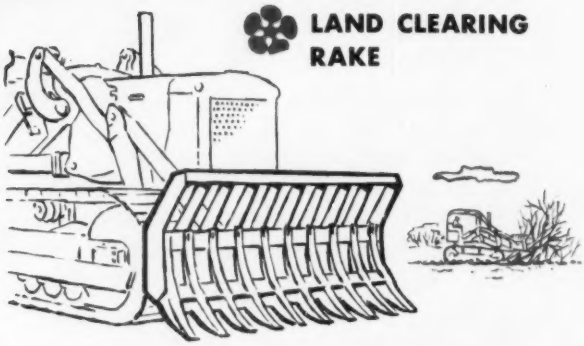


RAIL CAR SWITCHER

Here's a useful wheel loader attachment around any quarry, aggregate, mining or industrial operation where rail shipping or receiving is involved. Cars can be moved, using the power and traction of any Cat wheel Loader, without the need for special switching equipment.

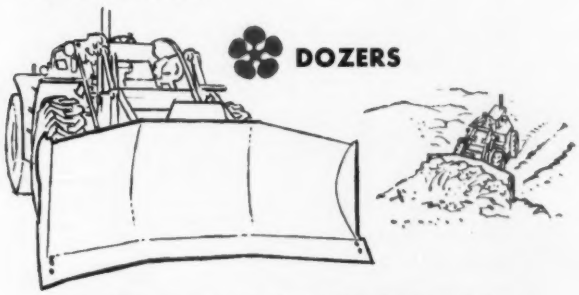
3. Loader tools to handle special jobs

LAND CLEARING RAKE



A Caterpillar track-type Loader makes a first-rate land clearing machine when the bucket is replaced by a brush or rock rake. Loader lift mechanism lets operator pile material for easy burning, or he can raise the rake and gain extra leverage for tree removal. Available on all six track-type and wheel loaders.

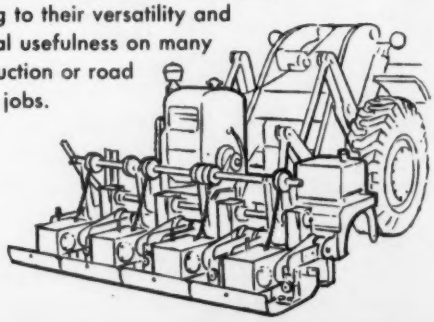
DOZERS



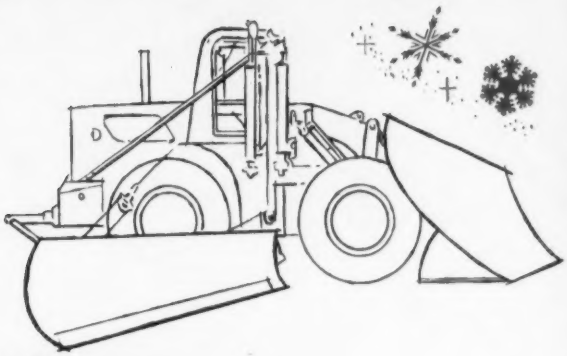
A complete range of dozer blades—straight, angling and "U"—is available for most Cat wheel or track-type Loaders. Invaluable for grading, clean-up or stockpile work.

TAMPERS

The three Cat wheel Loaders can be fitted to handle vibrating tampers, adding to their versatility and general usefulness on many construction or road repair jobs.



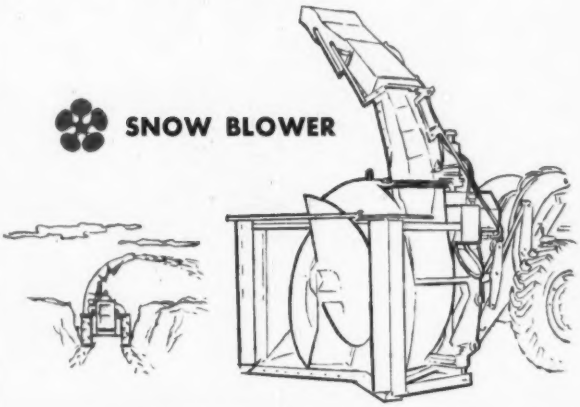
OF WAYS TO PROFIT



SNOW PLOWS

Snow plows—one-way, reversible and V-type—can be mounted on Cat wheel and track-type Loaders. For contractors who do snow removal and for governmental bodies this means their Traxcavator Loaders can be a versatile material handler during the work season and a powerful snow remover in the winter.

SNOW BLOWER



Up to 18 cu. yd. of snow per minute can be cleared with a variety of snow blowers and rotary snow plows which are available. Can be adapted to any Cat wheel or track-type Loader.

DEALER SERVICES BEHIND EVERY CAT-BUILT MACHINE AND ATTACHMENT

Count on your Caterpillar Dealer for complete details on these attachments for Cat-built Loaders . . . and for help in devising new attachments to make your Caterpillar machine more productive. You also can count on Caterpillar Dealer service!

PARTS—Your Caterpillar Dealer assumes the parts responsibility for Caterpillar machines and their attachments. This responsibility is backed by a large stock of parts and the facilities to protect his entire line of construction equipment.

SERVICE—Complete repair facilities with carefully trained mechanics and special time-saving tools for shop or field repairs.

LET US HELP YOU FIND NEW JOB OPPORTUNITIES WITH CATERPILLAR-BUILT LOADERS

What Makes Them Commit Unsafe Acts?

By William J. Milford

Accidents still occur in your organization despite the fact that there has been a topnotch accident prevention program going on for years. Improvement after improvement in equipment has been made to prevent their occurrence. Every possible safety device has been installed. Yet accidents still occur.

In just about every mining operation where safety programs have been a major part of the program, a continuation of accidents usually boils down to the problem of what makes the individual worker commit obviously unsafe acts. In some instances so much emphasis has been placed on safety in its other phases this angle has been almost completely neglected.

However, even where it is continuously emphasized these still occur. There is one big step remaining for management and for the individual foreman or superintendent in each department, i.e., to search out the causes of workers committing unsafe acts and taking steps to eliminate this factor.

The more we know of the causes behind such accidents—the more the individual foreman or superintendent knows—the easier it will be to prevent them (or at least minimize them) in the future.

Here, from several extensive studies, are the chief things to look for in the program of eliminating such personal hazards in an otherwise 100 per cent safe mining operation.

These break down into four main divisions, i.e. (1) improper attitude on the part of workers, (2) a lack of knowledge or skill, (3) employees actually physically unsuited for the specific job where they are assigned, and (4) improper mechanical or physical environment insofar as the individual is concerned.

By far the greatest number of these accidents fall into the first category. It embraces a fairly wide range of human attitudes which we can never ignore. All are so much a part of the specific employee's make-up that the simple posting of a given safety rule will accomplish little.

Where this particular cause is suspect we can look for the following: (a) The employee who wilfully disregards the safety rules and regulations and his own safety. (b) The individual who is reckless by nature. (c) The lazy man. (d) The uncooperative employee. (e) The egotistical, jealous or impatient person. (f) Men who are by their natures absentminded. (g) Over-excitable men placed in the wrong jobs for such conditions.

Just about every one of the foregoing is a problem of personal handling and adjustment and no set of rules or regulations can accomplish the end desired. It is a specific task of the foreman or superintendent to handle on a personal basis if he can.

Should efforts along these lines fail, better placement of such accident-prone employees is the next step. In some instances they need medical attention and even in rare cases discipline can handle the job but the latter course seldom attains any lasting results.

If the worker is an outstanding individual and shows outstanding ability at the particular job where he has been placed, it is worth a lot of effort to change these improper attitudes which are leading to accidents. On the other hand, should his abilities be no greater than average, it is definitely to the best interest of the company (as well as his fellow workers' safety) to place him in another job where his attitudes cannot result in accidents. Where this course is not possible the remaining step of dismissal is a must; no single individual possessing such improper safety attitudes should ever be allowed to endanger the well being of other employees.

Under the second major category we find that lack of knowledge or skill is very frequently the cause of such personally inspired accidents. In many cases these have occurred for no other reason than that the worker was insufficiently informed of what constituted accident hazards at his specific job. This has frequently occurred in organizations where great emphasis was placed on safety as an over-all campaign and little if anything was done by the foreman or superintendent in each department.

Safety programs too often fail to reach down to the specific individual. Generalized, over-all programs can accomplish a great deal but the accident problem will never be eased unless they are carried right down to the specific employee at his job. The foreman or the superintendent is the only man who can do this.

Misunderstandings also contribute to accidents in this category. Where this is happening, improvement in instruction procedures, more training and practice and similar steps are definite musts. No employee should ever be left on his own until his foreman feels certain that he definitely and clearly understands every hazard connected with his job and what he must do to keep accidents from occurring.

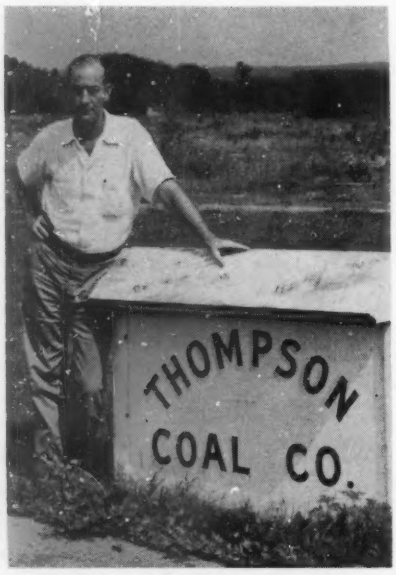
There are also many accidents which happen because the individual employee has never been convinced of the need for the recommended safety steps. Where such a situation exists the fault lies in instruction on safety as initially given the individual. Too often rules are laid down and no one ever bothers to offer an explanation of just why the rule exists and why it should be followed. Much closer following of safety rules and regulations can always be assured when this additional step is taken.

Under the third category we have those accidents caused by physically unsuited individuals and this is usually pure neglect on the

(Continued on Page 25)

Bay City 65 shovel loads coal while new Allis-Chalmers HD-21 cleans up around Lima 1250 dragline at Thompson Bros. Coal Co., Philipsburg.

Large Reserves Promise Bright Future for Pennsylvania Coal Stripper



Leroy "Gee" Thompson

Complete confidence in the future of the coal industry guides every step taken by Leroy "Gee" Thompson.

Now the head of three companies, he has followed a vigorous policy of expansion by acquiring extensive reserves and adding new, larger capacity equipment.

Thompson's companies include Thompson Coal Co.; Thompson Bros. Coal Co., in which his brother, Ralph, is a partner, and Thompson & Phillips Clay Co., Inc., in which Preston "Peck" Phillips is a partner. All three concerns share the same general office in Philipsburg, Pa.

Extent of coal reserves exceeds 8,000,000 tons in land owned or leased throughout Clearfield and Centre counties.

Productive capacity, with present equipment and personnel on a 5-day week, is 25,000 tons per month.

50,000 tons is uncovered in the pits ready to be loaded.

In addition, Thompson & Phillips owns or leases land holding a minimum of 1,000,000 tons of top grade clay and 3,000,000 tons of medium grade.

Thompson & Phillips Clay Company, Inc.

Stripping at Thompson & Phillips is now centered in six coal veins that have thicknesses varying between 13 and 32 inches.

These include upper "C," a rider vein, bottom "C," another rider vein, "B" rider and "B."

An additional two veins of "A" coal are readily available and will be uncovered in the near future. All are of a commercially acceptable grade.

At one point, a section of "D" Moshannon coal that averaged 7½ feet was uncovered. Similar "D" deposits are known to exist under several of the company's other properties.

To reach the bottom vein, up to 80 ft. of overburden must be removed. This job is handled by a new Lima 2400 dragline with 7 yd. bucket and a 3½ yd. Bucyrus-Erie 54 dragline.

Two P&H shovels load coal while an Allis-Chalmers HD-21 and International TD-18 clear ahead of draglines, clean coal, maintain access roads and backfill.

Clay Mining

Thompson & Phillips 11 clay properties are also worthy of note. Here, 4 to 12 feet of hard and soft clay are found under a cover of from 8 to 40 feet.

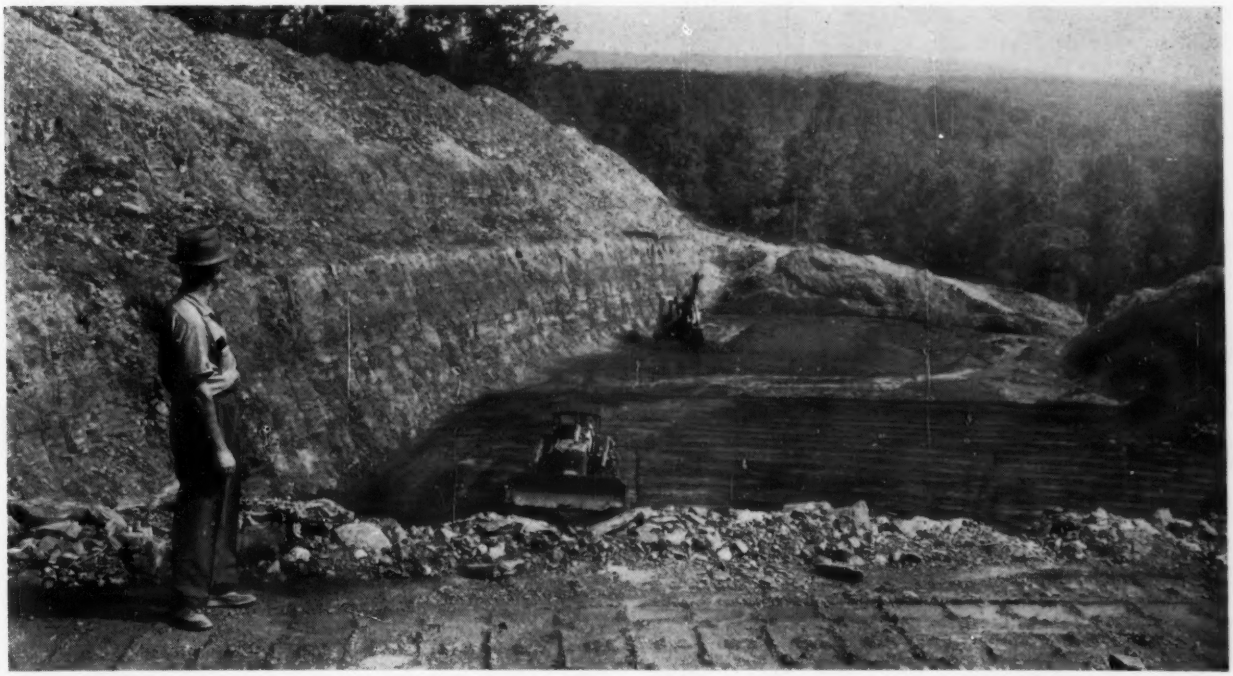
In many areas, a good grade of coal lies on top of the clay so both may be extracted profitably.

Clay customers consist primarily of fire brick manufacturers.

Thompson & Phillips was formed in 1952 by Leroy Thompson and Preston "Peck" Phillips. Early business was concentrated primarily in clay with a gradual shift to include

Allis-Chalmers HD-21 cleans coal as new Lima 2400 strips overburden at Thompson & Phillips Clay Company, Inc.

Backfilling at Thompson & Phillips is handled by this Allis-Chalmers HD-21.



Preston "Peck" Phillips looks over cut where International TD-18 and P&H shovel prepare to load coal at Thompson & Phillips.

coal. All mine operations are under the direction of Phillips.

Thompson Coal and Thompson Bros.

Work at Thompson Coal Co., Inc. and Thompson Bros. Coal Co. is wholly concentrated in coal. Main mine is centered on land containing 36 inch "B" coal at a depth of from 29 to 47 feet.

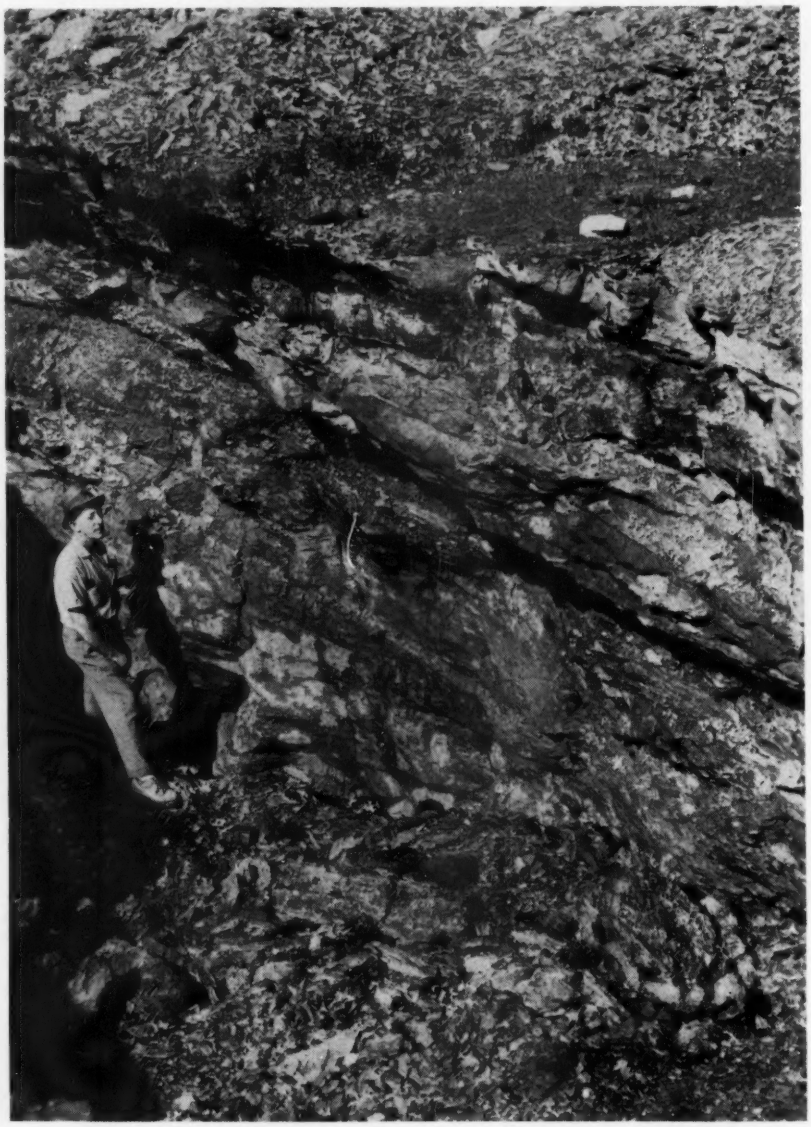
Overburden here and at Thompson & Phillips consists mostly of shale and sand rock that must be blasted. For this job, Thompson uses a Davey M-8A vertical rotary drill for drilling 5-⅝ inch holes in a series of patterns that varies with the makeup and depth of the rock. Holes are loaded with ammonium nitrate and initiated with a suitable primer and detonating fuse.

Stripping is handled by a new 7 yd. Lima 2400 dragline and 4 yd. Lima 1250 dragline.

Two shovels, a Bay City 65 and P&H 655, load coal. Two new Allis-Chalmers HD-21 bulldozers clear land, prepare benches for draglines, clean coal, maintain roads and backfill.

A group of Jaeger pumps, ranging in size from 2 to 6 inches, handles water problems.

A feature of all Thompson operations is the excellent condition in which equipment is maintained. This is in accordance with a program worked out in conjunction with distributors from which machinery was purchased.



Preston Phillips inspects fire clay deposit at Thompson & Phillips.

Clay stockpiles at Thompson & Phillips

On the job supervision of Thompson Coal and Thompson Bros. is the responsibility of Ralph Thompson. Also, Leroy's two sons, Ronald and Leonard, along with son-in-law Perry Reese, are actively engaged in the firms' everyday affairs.

Past, Present and Future

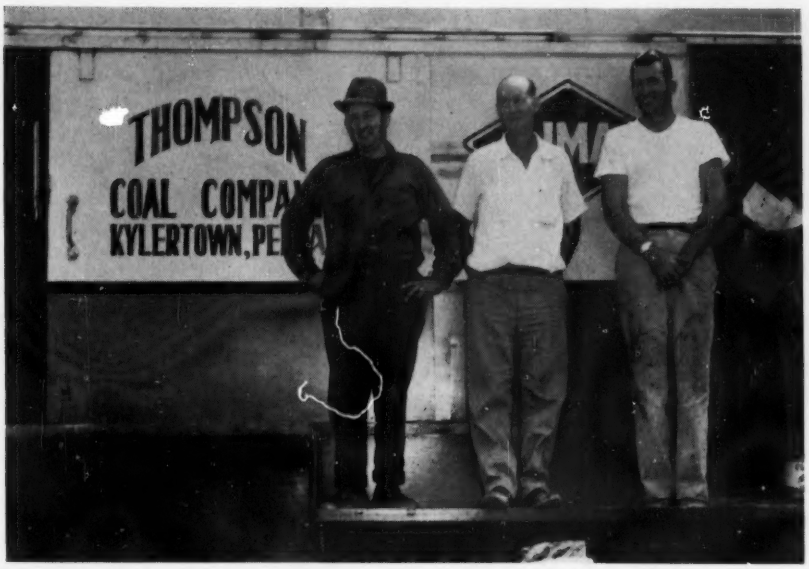
In the future, Leroy Thompson expects to add further to his reserves and boost production capacity.

For the latter, he has purchased two new Lima 2400 draglines and two new Allis-Chalmers HD-21s within the last six months from Highway Equipment Company, Pittsburgh and DuBois. Also, he is building a large, modern preparation plant on the Pennsylvania railroad to load double screen coal. Recently, he bought another tipple to take care of present output.

For Leroy Thompson, this is another logical step along a road that started in 1940 when he started in the coal business by stripping and loading with one second-hand shovel.

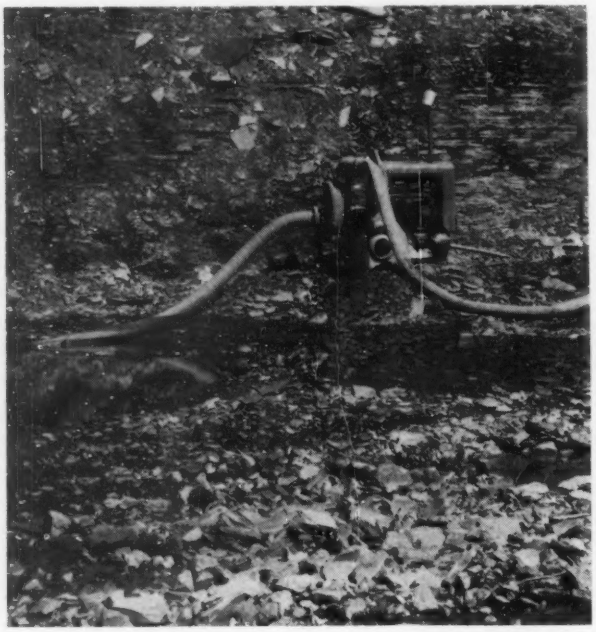
In 1947, after acquiring new customers and equipment, Leroy formed a partnership with Frans Kristianson. This operated as Kristianson and Thompson Coal Co. In 1953, he bought out the Kristianson interests and formed Thompson Coal Co.

Today, Thompson Bros. and Thompson Coal employ a total of 32. Thompson & Phillips employs another 23. Tomorrow, according to Thompson, there will be more.



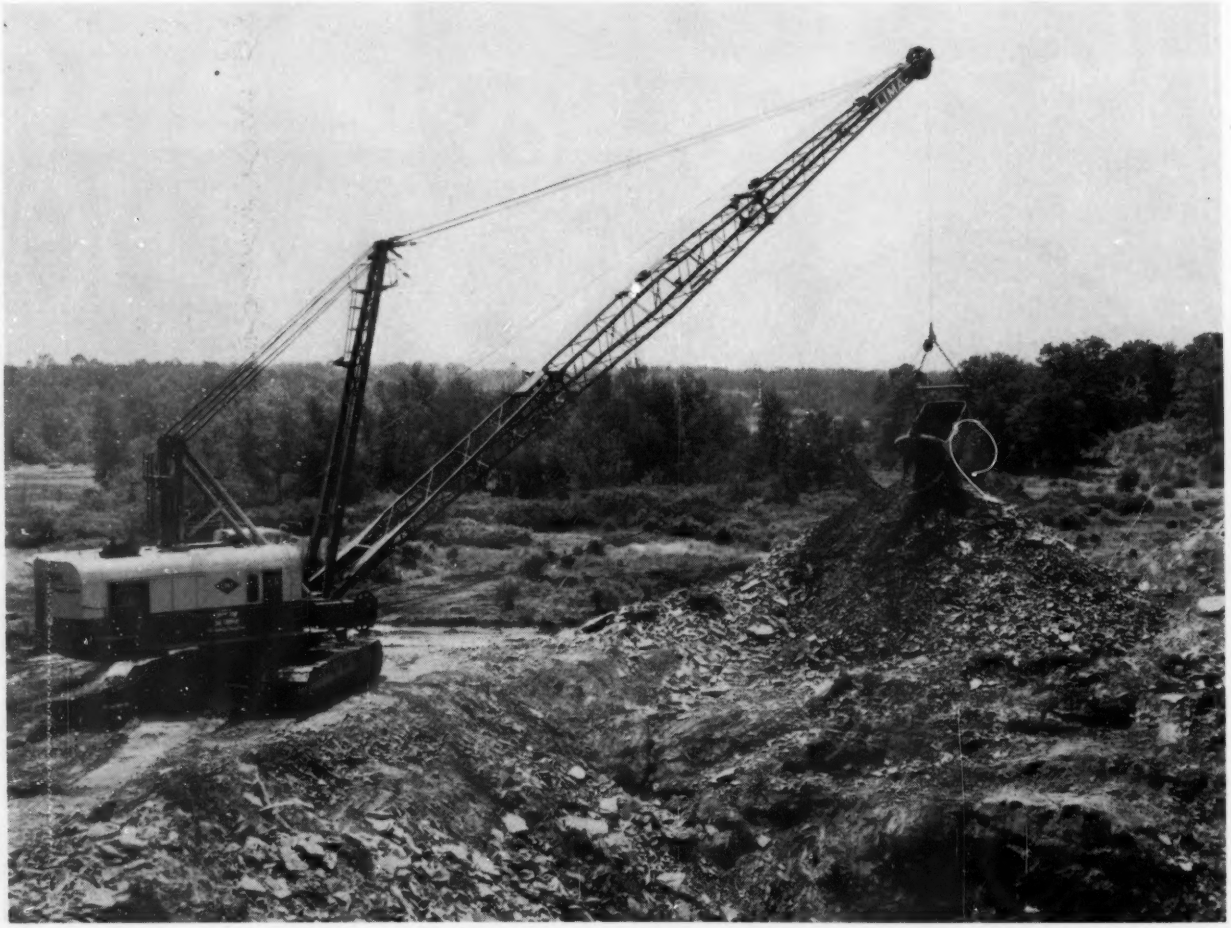
Left to right are Ralph Thompson, Leroy Thompson and dragline operator Richard Williams

New Allis-Chalmers HD-21, operated by Charles Maines, Jr., cleans coal at Thompson Bros. Coal Co.

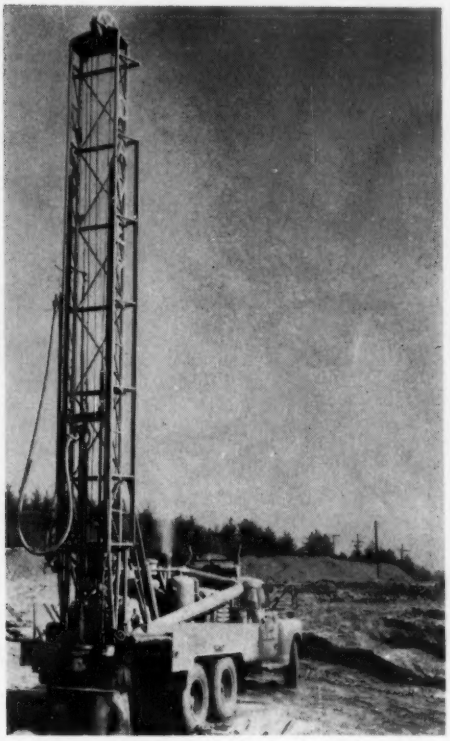


Jaeger 6 inch pump drains cut at Thompson Coal

Ralph Thompson watches Lima 1250 operate at Thompson Bros.



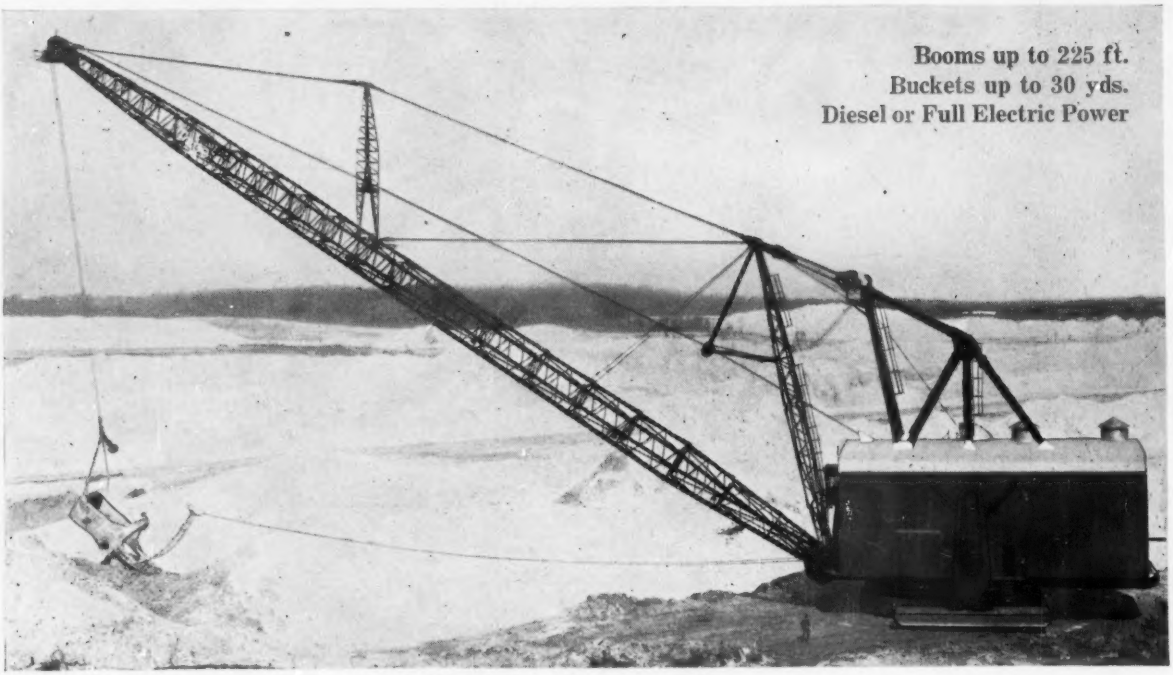
New Lima 2400, recently purchased from Highway Equipment Company, DuBois, strips overburden at Thompson Coal Co.



Davey M-8A rotary drill is used for drilling 5-⅝ inch blast holes at all Thompson mines.

New Allis-Chalmers HD-21 works at bottom of cut at Thompson Coal.

Heavy unseasonal rains have left standing water at this Thompson & Phillips clay mine



Model 735 PAGE Electric Dragline, with 220 ft. Boom and 21 yd. Bucket

Owned by Southern Clays, Inc., Gordon, Georgia

Find out the EXTRA YARDAGE you can get with a Page Walker

Page Walkers are stripping at a profit where other machines lost money, because nothing equals the Page 700 Series for high production.

Having the fastest practical hoist and swing speeds, they are consistently out-performing slower machines in every kind of digging.

The rugged strength built into these machines is giving owners the least down time and lowest maintenance they've ever had.

Furnished with either Page V-type Diesel engine or Full Electric power.

Get an estimate of your own stripping cost with a Page. We'll be glad to give you figures you can depend on, based on actual records of what has been done.

FRANK SWABB EQUIPMENT CO.

Hazleton National Bank Bldg., Hazleton, Pa. Phone GLadstone 5-3658

For High Production and Lowest Operating Costs--

NOTHING equals this PAGE 700 series

SINGLE DECK WALKING DRAGLINES

Holding On To That Good Foreman

(Continued from Page 14)

us, "While here we're all rotated around on different spots. The boss actually tries to do it this way to keep our work from becoming monotonous and to give us more experience."

Keep the men sold on the coal business — That is a most frequently overlooked point. This field each year loses far too many good foreman to other lines of business and other fields. The individual's becoming sold on the greater opportunities in the new field is the chief reason.

As long as the good foreman remains convinced that he is working in a topnotch field, doing a job of service as well as making a living, and is in a business of which he can be proud to be a member, he is less apt to be dissatisfied with the job he holds.

Make his "executive" status real — One of the great incentives of every man as he works up toward a foremanship is to become an "executive." If the management treats him as just another employee when he achieves that rating he will sooner or later start looking around for someone else who will give it to him.

Demonstrated pride in having the men on your staff is another good procedure; failure to do so can rankle when other firms are doing such things as giving top foremen recognition within the trade. Arthur K——— explained it to us in this way: "I'd been on the staff of that firm for over ten years as a foreman and had never had a pat on the back from the boss. No matter what any of us did we were never complimented either privately or publicly." Matt S—— had this to say: "There just was no appreciation for anything in our firm—the management always acted as though we just didn't exist except when something went wrong."

Continued pushing of inferior supplies and materials used can also lose any firm its good foremen. "I simply got fed up with being asked to do a good job with the worst possible supplies money could buy," Terry F——— told us, "and then having to take the blame every time something went wrong. You just can't turn out a good job using that sort of stuff. That's why I left that particular firm."

One final thing—snoop around and keep track of what competitors are doing. We can manage our own staff a lot better if we know what is going on than if we remain aloof from the situation. It also helps any executive himself in exercising closer control over his own staff to know what inducements may be coming their way from the competition!

I-H Model TD-25 tractor, equipped with 16 x 6 Rish coal blade, pushing stock pile coal into grizzly feeder at a Western Pennsylvania power generating plant.

Sixty-four mining industry representatives from six countries attended the Inter-American Mining Seminar in Chicago's McCormick Place July 26, sponsored by International Minerals & Chemical Corporation in cooperation with the Chicago International Trade Fair. Principal speakers, pictured here left to right, are Jose Campillo, president of the Mining Federation of Mexico; V. C. Wansbrough, managing director of the Canadian Metal Mining Association; Nelson C. White, chairman of the seminar and Vice President of IMC; Marling J. Ankeny, Director, U. S. Bureau of Mines; and Daniel Kuri Brena, representing Mexico's Minister of National Patrimony.

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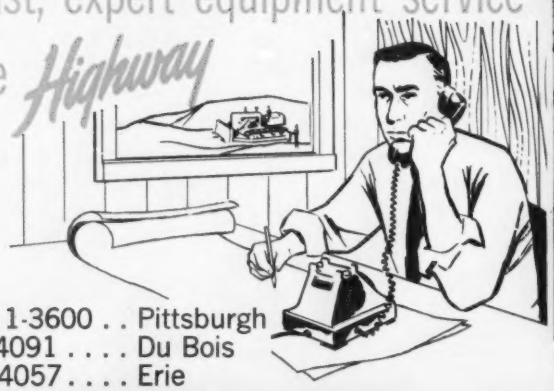
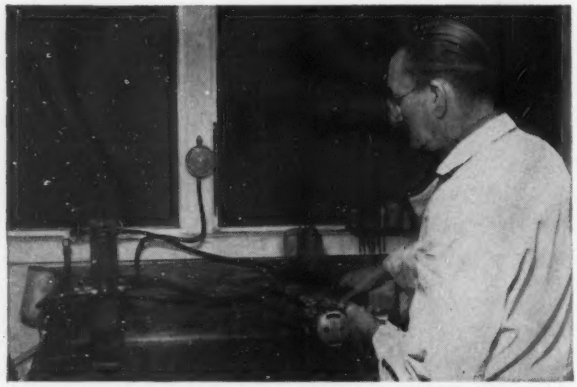
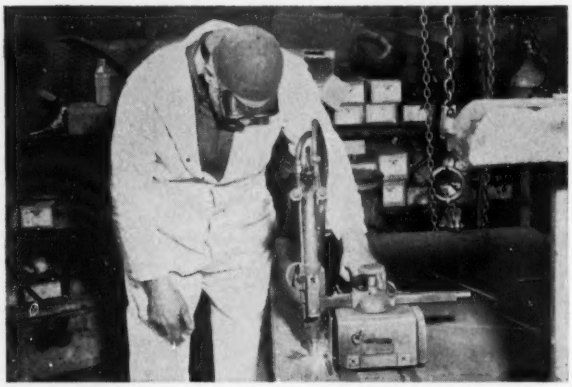


EMerson 1-3600 . . Pittsburgh
Du Bois 4091 . . . . Du Bois
UNion 4-4057 . . . . Erie

Sam Sarver "turns down" and "rounds" armature in Highway's Pittsburgh shop.

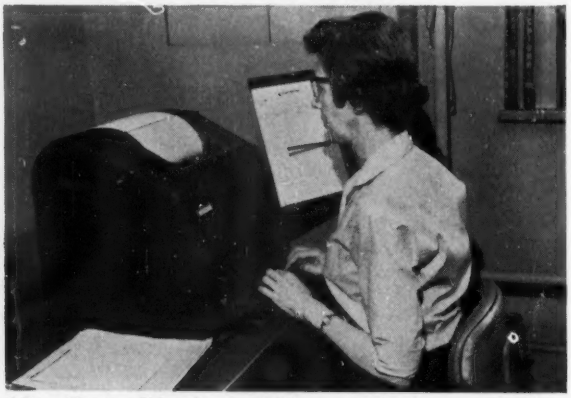


Veteran engine expert Jack Sable tests fuel transfer pump.



Henry Puhl operates automatic line cutter which accurately shears steel of all thicknesses.

Charles Hovanec puts main bearing insert in Allis-Chalmers engine.



Miss Betty Ritzel requisitions parts from manufacturers via direct TWX wire.

Highway offers 'round-the-clock service on all repair and maintenance jobs—large or small. There are 87 expert, factory trained mechanics to serve you . . . parts stocks of more than 23,800 different items . . . direct TWX lines to manufacturers . . . 32 traveling service trucks . . . the finest over-all service ever offered by any distributor.

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Rogers Trailers

Makes Them Commit Unsafe Acts

(Continued from Page 15)

part of management. It is very often in failure to require periodic physical checkups of ALL employees on the staff. Defects in hearing, sight, age, height, allergies, slow reactions, etc., can seldom be discovered unless such check-ups are made.

It must also be kept in mind that some of these can occur with the passage of time. A man who passes all such tests upon employment can, even in a year or two of time, develop one or more of these physical handicaps which will make him an unintentional safety violator.

In many organizations foremen keep on the constant alert for such changes in the physical make-up of the men under them. Usually there are warnings which occur in routine work procedures which, if spotted immediately, can foretell more serious conditions to come. If something is done about it then and there, the major accident can definitely be prevented.

Where such conditions can be medically corrected that is the obvious step. Usually the worker himself is the last individual aware of what is happening to him. When he is shown the change that is occurring, he will usually follow through with corrective medical treatment. Left on his own he is most apt to seek such treatment only after an accident has occurred and the cause become crystal clear to him.

There should also be a policy in any mining organization which provides for job changes and replacement on individual workers no longer fully capable of handling hazardous or semi-hazardous jobs. Leaving them at their posts because we want to take advantage of their skills and experiences is too risky to be economically advisable.

In the last group are those caused by improper mechanical or physical environment and this includes such factors as space, light, heat, arrangement, ventilation, materials, tools, equipment, company policy, etc.—anything which makes the job awkward, difficult, inconvenient or in any other way hazardous.

All of these embrace the need for action on the part of management in what is known as engineering revision—attacking the problem from the engineering standpoint and providing changes on the specific job which will either lessen or eliminate all of the foregoing.

Finally, it is of particular importance that where such accidents have occurred, management (and that goes right down to the specific foreman) must search out the personal causes of these accidents and handle the problem as an individual one rather than through posting another safety rule for all to follow. The employee who will not wear safety goggles because they are uncomfortable has to be shown that is worthwhile to put up with this discomfort. The same thing applies for any other such occurrence anywhere.

• Holley Carburetor Company has developed an auxiliary governor system to control the speed of power equipment with a wide variation in load requirements.

The new system is the first practical control to automatically adjust power supply to keep power take-off speed constant. The new governor will provide positive protection for costly hydraulic pumps, and will help lower maintenance costs and increase the efficiency of the equipment on which it is installed.

Direct savings result from elimination of "watchdog" requirements, freeing a workman for other duties. Equally important is the protection factor, tending to decrease downtime for field crews while repairs or replacements are being made on components driven by power take-offs.

The Holley auxiliary governor system is not limited to hydraulic applications, although originally designed with that in mind. It can be adapted to control the speed of any hydraulic or mechanical devices powered by gasoline engines, the manufacturer says. Principal applications are made by utility body manufacturers for special purpose trucks and tractors equipped with earth augers, diggers, compressors, winches and other heavy equipment for utility companies, construction firms and municipal service maintenance departments.

Engine power must be adjusted continually to maintain a constant speed of the work tool under a wide range of load requirements and manual throttle operation—or "watchdogging" — not only requires constant supervision but is subject to human error.

The Holley system operates from a driven unit mounted on the power take-off and automatically adjusts the throttle to maintain specified speed of the work tool with every change in load. The auxiliary governor is virtually ready for most American-made trucks with certain parts universal for all applications, but the system must be custom fitted to the vehicle and equipment to meet exact requirements of the user.

It has been designed to operate in conjunction with the engine speed governor as calibrated by the engine manufacturer. On applications where no speed governor is integral in the carburetor, a sandwich type governor is installed between the carburetor and the manifold.

Further information is available from utility body manufacturers or by writing B. R. Tabbert, Holley Carburetor Company, 11955 E. Nine Mile Road, Warren, Michigan.

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We share our profits with those from whom we buy and to whom we sell, by passing on the savings of large-scale, diversified operation. That's why we pay year-round fair prices for any kind and quantity of mining equipment and/or complete mines. That's why we guarantee mine operators who buy from us an unfailing source of supply at fair prices always! Choose from our Huge Stock of the Best in latest type Mining Equipment. Six Mines now being dismantled in various sections of the country. Send us your Inquiries. Known by the Reliability of our service as well as the quality of our product.

JOY EQUIPMENT—REBUILT

2—Joy 14BU 9AE Super Loaders—26" Hi—New 1958.
2—Joy 14BU Loaders, low pedestal, 7AE, 1956 & 57.
4—Joy 14BU Loaders, medium pedestal,7RBE.
2—Joy 14BU 7CE high pedestal loaders.
4—Joy 14BU 3PE Loaders.
2—Joy 12BU Loaders complete with Piggybacks.
2—Joy 12BU Loaders, 9E latest type 250 V. DC.
3—Joy 12BU Loaders, 220/440 Volt AC.
1—Joy 20BU Loader, latest type.
4—Joy 11BU Loaders, latest type.
1—Joy 8BU Loader, 34" overall height.
1—Joy 8BU Loader,220 V. AC.
1—Joy curved Bar Head for 14BU, complete.
6—Reliance 24-J Motors, 7½ H.P.
4—Reliance 38-J Motors, 10 H.P.
2—Reliance 40-J Motors, 15 H.P.
20—Reliance 9-J Motors, 4 H. P.
1—Goodman 660 Loader on Crawlers, excellent 250 V. DC.
1—Goodman 665 Loader on Crawlers, latest type 250 V. DC.
1—Goodman 865 Loader, 26" hi, 250 V. DC.
4—Joy 8SC Shuttle Cars, 26" Hi, rebuilt.
5—8SC Shuttle Cars, as removed from service, 26" Hi.
4—Joy 6SC Shuttle Cars, rebuilt, latest type
6—Joy 6SC Shuttle Cars, as removed from service.
1—Joy 5SC Shuttle Car, Excellent.
2—Joy 32E9 Shuttle Cars.
2—Joy 32E10 Shuttle Cars, rebuilt.
6—Joy 32E15 Shuttle Cars, rebuilt.
4—Joy 32E16 Shuttle Cars, rebuilt.
10—Joy 42E16 Shuttle Cars, rebuilt and as is.
1—Joy CD-22 Drill, on rubber, like new.
6—Joy T-2-5 low pan Crawler Trucks, rebuilt.
1—Joy T-2-6 low pan Crawler Truck with reel.
2—Joy T-1, Standard Crawler Trucks, 220 AC.
1—Joy T-1 Standard Crawler Truck, 250 DC.
4—Joy 11-B Cutting Mach., like new, 35 & 50 HP.
4—Joy 7-B Cutting Machines, like new,250 and 500 Volt.
4—Goodman 212 Cutting Machines, 19" high.
2—Goodman 312 Cutting Machines, 17" high.
2—Goodman 412 Cutting Machines, 19" high.
1—Goodman Machine on Crawler, 31" high. All hydraulic.
6—Goodman 512 Machines with Bugdusters. rebuilt and as removed from service.
6—Goodman 612 Cutting Machines, 250 & 500 volt.
1—Jeffrey 70 URB rubber tired Cutter. Universal head, perfect condition.
1—Goodman 2410 Rubber Tired Cutter, Universal head, like new.
1—Joy 11RU Rubber Tired Cutters with Bugdusters. Universal heads, dual tires, like new, 250 V. DC.
2—Joy 10RU Rubber Tired Cutters, Universal head, 250 V. DC. Rebuilt or as is.
1—Sullivan 7AU on Dual Rubber Tires 250 V. DC.
6—7AU's on track, Universal head.
2—Jeffrey 29UC Cutting Machines, Universal head, cuts anywhere in seam, 38" high, on Crawlers. 250 volt D.C.
4—Jeffrey 29LC on Crawlers, rebuilt or as removed from service.

LOCOMOTIVES

1—Goodman 6 ton, 93-A, 27" high, armor plate frame.
1—Jeffrey 15 ton MH-77 locomotive, armor plate frame.
7—Jeffrey, 13 ton, type MH-110, 36". 42" and 44" ga.
2—Jeffrey 10 ton, type MH-110, 42" and 44" ga.
2—Jeffrey, 10 ton, type MH-78, 42" and 44" ga.
2—Goodman 8-30 and 10-30 Locos., 26" above rail.
1—Jeffrey MH-150, 6 ton, 26" overall height, rebuilt with reel.
12—Jeffrey, 6 ton, type MH-88, 42", 44" and 48" ga.
4—Jeffrey, 8 ton, type MH-100 2½" armor plate frames.
3—Jeffrey, 4 ton, type MH-96, 42", 44" and 48" ga.
1—G.E., 4 ton, type 825 Locomotive, 22" high.
10—G.E., 6 ton, types 801, 803, 821 Locomotives. 42", 44" and 48" ga
1—G.E., 8 ton, type 822 Locomotive, 44" ga.
3—G.E., 10 ton, type 809 Locomotives, 42", 44" and 48" ga.
2—G. E. 13 ton, type 829 Locomotives, armor plate frames.
1—Goodman 91A Locomotive, 8 ton, 26" overall height.
2—Goodman, type 33, 6 ton, 44" and 48" ga.
3—Westinghouse type 902, 4 ton, 42" and 48" ga.
1—Atlas Battery Locomotive, 36" ga.
1—Atlas Trolley Locomotive, 4 ton, 24" high.
2—Westinghouse, type 904, 6 ton, 44" and 48" ga.
2—Westinghouse, type 906, 44" and 48" ga.
2—Westinghouse, type 907, 10 ton, 44" and 48" ga.
3—Westinghouse 908, 13 ton, Locomotives, 42" and 48" ga.
8—Jeffrey MH-78 Locomotive Units, cheap.
4—Jeffrey MH-88 Locomotive Units, real bargains.
6—Jeffrey MH-100 Locomotive Units, resonable.
3—Plymouth Diesel Locomotives, 8 and 10 tons, 42" and 44" ga.
Locomotive Trucks & Spare Armatures for the above.

TIPPLE EQUIPMENT

1—All Steel 5 Track Tipple, new 1957, complete with washer, silo, oil treating system, all bolted construction.
1—Complete Five Track Tipple with Washers and Air Tables.
1—Complete stoker plant, all steel.
2—Complete Tipples, 3 & 5 track, steel and wood.
3—Cleaning Plants, 1 ea. McNally, Roberts and Schaefer, Jeffrey Washers and Air-Flo Tables.
4—Complete Aerial Trams for coal or refuse.
3—Complete Rope and Button Lines.
2—Monitor Lines complete with Drums, excel.
1—Allis-Chalmers 5 x 12 Rippflo Vibrator.
1—Allis-Chalmers 4 x 12 Low-Head Vibrator.
1—Robins Gyrex Vibrator, 4 x 10.
10—Belt and Apron type Loading Booms.
6—Shaker Screens.
1—Robins Car Shakeout.
1—Gundlach Crusher, like new.
20—Crushers, various sizes—Jeffrey, Link-Belt. McLanahan & McNally.
4—Mine Scales, 10 & 20 ton.
5—Truck Scales, 25 to 40 ton, New and Used.
Feeders. Belt and Drag Conveyors, Car Retarders.

CUTTING MACHINES

2—Joy 10 RU Rubber Tired Cutters, Universal head, 250 V. DC. As is or rebuilt.
1—Joy 11RU Rubber Tired Cutter, 250 V. DC.
1—Goodman 2410 Rubber Tired Cutter. Universal head, new 1956. Excellent.
2—Jeffrey 29UC Universal Machines on Crawlers
1—Goodman on Crawlers, 31" overall height.
4—Baby Goodman 212's, rebuilt, 250 V. DC.
2—Goodman 312 Cutting Machines, 17" high.
4—Goodman 412 Cutting Machines, 19" high.
6—Goodman 512's with Bugdusters, like new.
4—Goodman 512's, rebuilt, or as removed from service.
6—Goodman 612's—250 & 500 Volt.
3—Goodman 112's, 220/440 Volt A. C.
4—Joy 7-B Cutting Machines, 250 and 500 Volt.
4—Joy 11B Cutting Machines, rebuilt, 35 & 50 H. P.
6—7AU's, on track, Universal head.
10—Goodman 12AA's and 112AA's, 220 V. D. C.
2—Goodman 324 Slabbers.
2—Goodman 724 Slabbers.
2—Goodman 824 Slabbers.
6—Jeffrey 35L's, like new, 250 V. D. C. 17" high.
2—Jeffrey 35L's, on low vein trucks.
3—Jeffrey 35BB's 220/440 A. C.
15—Jeffrey 35B's and 35BB's 250 V. D. C.
2—Jeffrey 29B's on track.
10—Jeffrey 29C's track mounted.
2—Jeffrey 29L's, on Crawlers. Excellent.
4—Sullivan CE7, 220/440 V. AC.

CONVEYORS

2—Joy 1200 ft. Belt Conveyors 30" "Limberoller," like new.
1—Each 30" and 36" Joy 1000' extensible belt, latest type, like new.
1—Goodman 97HC 30" Rope Belts, 1000' perfect, With or without rubber.
4—Jeffrey 52-B tandem drive 30" and 36" Belt Conveyors, 600' to 2000'.
1—Jeffrey 52-B tandem drive 26" Belt Conveyor.
1—Joy 30" Underground Belt Conveyor. Excell.
1—Goodman 97-C, 30" tandem drive.
1—Robins 38" tandom drive, with or without motor.
5,000'—52-B Belt Structure 30".
1,000' Conveyor Belt, 42".
1,500' Conveyor Belt, 36".
2,000' Conveyor Belt, 30".
1,000' Conveyor Belt, 26".
8—Jeffrey 61AM 12" Chain Conveyors, 300'.
2—61EW Elevating Conveyors.
2—61WH 15" Room Conveyors, 300'.
2—Joy 15" Room Conveyors, 300'.
2—Joy 20" Conveyors, 300'.
4—Joy Ladel UN-17 Shakers.
10—Goodman G-12½ and G-15 Shakers.
1,000' Goodman 18" Flat Belt Conveyors, tandem drive any length, Perfect.

CONVERTORS AND DIESEL PLANTS

1—300KW, G.E. Stationary Rectifier.
2—500KW G. E. Stationary Rectifiers.
4—1,000KW Stationary Rectifiers.
2—100KW. G. E. TCC-6's, 275 V., Rotary Converter.
1—150KW. G. E. HCC-6 275 V., Rotary Converters.
1—150KW. 6 phase. Allis-Chalmers Rotary Converters. 275 V. D. C.
2—200KW G. E. HCC-6's, Rotary Convertors, 275 V. D. C. Steel frames, Newly rewound.
3—300KW G. E. HCC-6's Rotary Converters, 275 V. D. C. Like New.
2—300 KW West., 6 phase, Rotary Converters. 275 V. D.C.
2—500KW. West. Rotary Converters. 275 V. D.C.
1—200KW West. Rotary Converter, 275 V. D.C. Newly rewound.
(All the above with 6900/13000 and/or 2300/4000 primary transformers).
1—50KW MG Set.
1—100KW MG Set. 275 V. D.C.
6—150KW MG Sets, G. E. and West., 275 V.D.C.
2—200KW MG Sets, West., rebuilt, 275V. D.C.
1—200KW MG Set. G. E. perfect, 275 V. D.C.
2—300KW G.E. MG Sets, like new.
3—300KW Westinghouse MG Sets, 275 V., rebuilt.
1—300KW West. 600 volt MG Set, rebuilt.
2—200KW, G.E. Rotary Converters, 600 V. D.C.
2—300KW Westinghouse, 600 volt, 6 phase. Rotary Converters.
4—300KW G.E. Rotary Converters, 600 V. D.C.
2—500KW Westinghouse, 600 volt, D.C., 6 phase, Rotary Converters.
2—500KW G.E. HCC-6's, Rotary Conv., 6 phase, 600 V. D.C.
3—GMC-671 Diesels w/75 & 110KW, 250 V. D.C.
1—Int. VD-14 Diesel with 50KW, 250 V. D.C. Gen.
1—GMC-471 Diesel with 60KW, 250 V. D.C. Gen.
1—100KW Natural or LP Gas Engine with Generator.

LOADING MACHINES

16—Joy Loaders, 14BU, 12BU, 8BU, 11BU, 20BU.
5—Joy 12BU9E Loaders, 220/440 V. A.C. Excellent.
3—Joy 12BU9E Loaders, latest type.
2—Joy 12BU with Piggyback Conveyors.
1—Goodman 865 Loaders, 26", on Crawlers.
1—Goodman 665 Loader, on Crawlers, rebuilt.
1—Goodman 660 Loader, on Crawlers, 250 V. DC.
1—Goodman 460, on track, rebuilt, all hydraulic.
2—Jeffrey 61 CLR's on rubber, 26".
3—Jeffrey L-500 Loaders.
2—Myers Whaley, No. 3 Automatic Loaders.
2—Clarkson Loaders, 26" above rail.

MISCELLANEOUS

1—Jeffrey 76—A Col Mol, 220/440 perfect.
1—Joy 5 JCM Continuous Miner, 220/440, perfect.
150 Tons Copper—4/0 and 9 Section Trolley 1/0, 2/0, 4/0 Stranded, 500 MCM, 750 MCM. 1,000,000 MCM Insulated.
1—Each 4', 5', 6' & 8' Hi Pressure Joy & Jeffrey latest type Fans.
1—Complete Five Track Tipple with washers and Air Tables.
5—Complete Tipplas, 3 to 5 Track. Wood and Steel.
Steel trestles for drop bottom cars.
All Steel Armco Buildings.
20—Jeffrey Molveyors on rubber tires.
1—¾ Yard Shovel and Back-Hoe.
2—¾ Yard Crawler Cranes, Gas.
Battery Supply Tractors, Rubber Tired.
1—Cantrell Air Compressor on rubber tires.
10—Air Compressors, 1 H.P. to 40 H.P.
1—Joy self-propelled rubber tired comp., 240 cu. ft.
1—Acme self-propelled rubber tired compressor, 130 cu. ft.
40—Mine Pumps, all types.
1—Differential 40 passenger Man-Trip car.
6—MSA Rock Dusters.
Joy Roof Drills—Schroeder Coal Drills.
2—Phillips Carriers, 44" and 48" ga.
1—Barber-Greene self-propelled Bucket Elevator.
Pipe, Plastic, Steel Transit, all sizes 1" to 6".
25,000 Roof Bolts, all types.
300—Mine Cars, drop bottom, 42" 44" 48" Ga.
300—Mine Cars, 18" high, end dump, 42", 44", 48" Ga.
1—10 ton Mine Car Scale with Recorder.
4—Brown Fayro 15 HP latest type Hoists.
15—Brown Fayro HKL and HG Car Spotters.
1—Brown Fayro Hydraulic Car Spotter.
1—12 ton Differential Slate Larry.
Incline Hoists, 25 to 150 HP.
Shaft Hoists to 700 HP complete.
1—Jeffrey 5', 6' & 8', Like New, Aerodyne Fans.
6—Storage Tanks, 6,000, 8,000, 10,000 gallons
10,000 Five Gallon G. I. Cans, screw lids.
2,500 tons Relaying Rail, 25lb., 30lb., 40lb. 50lb., 60lb., 70lb., 90lb., 100lb.
500 MCM, 750 MCM 1000 MCM Bare & Insulated.
Thousands of feet of rubber covered three conductor cable. All sizes.
500—Transformers from 1 to 500 KVA, 110 to 13,000 primary volts.
400—Electric Motors. 3 to 250 H.P.
Huge Stock of Mine Supplies.
600—MSA Mine Lamps, Chargers, etc.
4—Mine Scales, 10 & 20 tons.
5 Truck Scales, 25 to 40 tons, late type.
Mack & International tandem dump trucks.
Latest type Saw Mill, complete.
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ADVERTISERS' INDEX

SEPTEMBER, 1961

• A new line of industrial safety hats and caps—injection molded with polycarbonate, one of the newest of the exotic high impact engineering thermoplastics — has just been announced by Mine Safety Appliances Company, Pittsburgh.

The new head protection is the Topgard hat line.

It is believed to be the most advanced head protection available where there is danger of falling objects in industries such as shipbuilding, chemical, mining, engineering, construction, lumber, material handling, steel production, metalworking, power, roofing, and quarrying.

New M-S-A Topgard cap for general industrial use is first polycarbonate safety helmet to be offered to industry. It is also produced in hat model—both featuring unique single-ridge design.

Introduction of the Topgard hat line marks the first time polycarbonate has been incorporated into manufacture of a safety hat or cap. Polycarbonate is the most advanced of the family of new, engineering thermoplastic materials, combining the impact strength of metal and the natural resilience of plastic.

MSA reports the Topgard hat is virtually indestructible.

The smartly styled line of head protection—under development for the past three years—is perhaps the most thoroughly researched and tested equipment of its kind ever made available to the industrial market.

From the pilot plant stage, MSA's team of head protection and plastics engineers worked closely with the polycarbonate manufacturer. As soon as polycarbonate was available in production quantities, the firm was ready to introduce the Topgard hats and caps.

Lightweight and designed with a single ridge construction to help deflect the force of a falling object, the new headgear complies with Federal Specification GGG-H-142b and specifications of the American Standards Association. Unique uniridge construction adds strength; and reduces the possibility of forces being trapped, as compared to multi-ridge design.

Other features include:

Retention of flexural strength and rigidity at extremely low and high temperatures . . .—100 degrees to 270 degrees Fahrenheit.

Impact and puncture resistance is unprecedented.

Longer life through abrasion resistance that protects color and finish.

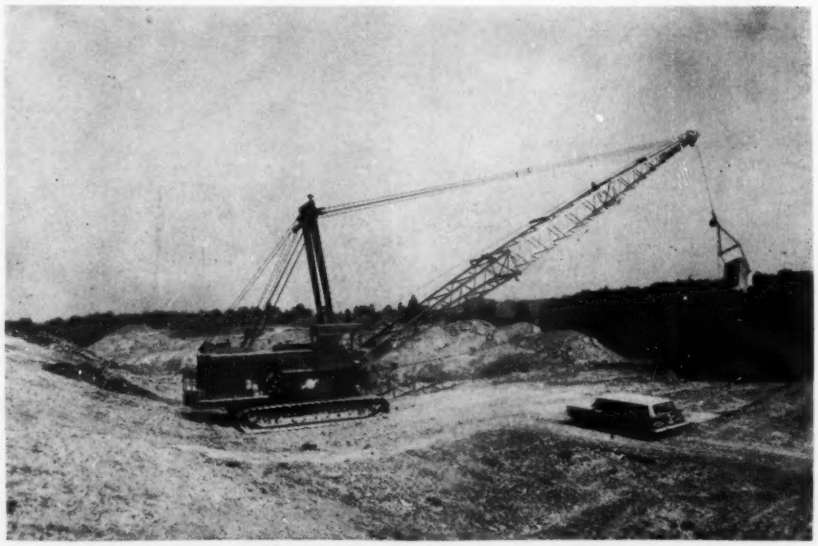
Extraordinary dielectric properties.

High resistance to chemicals, acids, and alkalies.

Both the Topgard hats and caps are available in nine molded-in non-fading colors — red, yellow, white, black, blue, gray, green, orange, and brown.

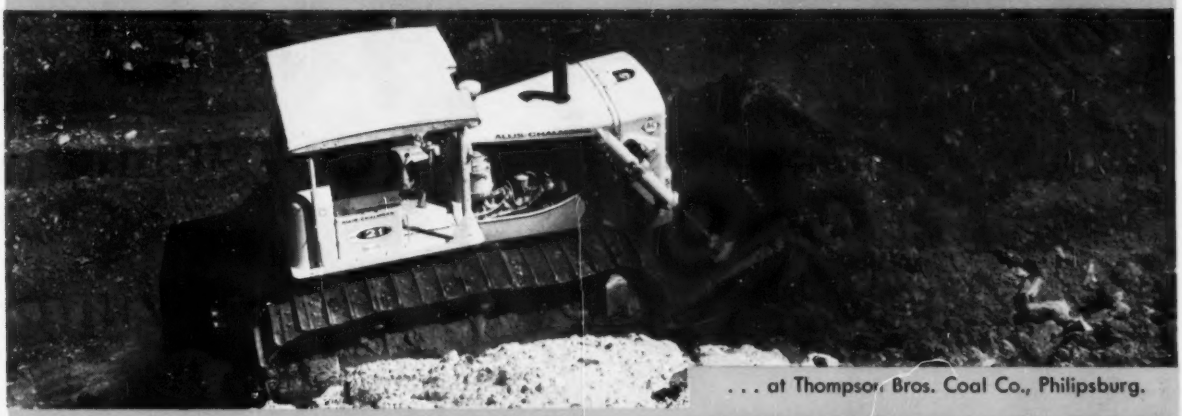
The new line retains MSA's unique fixed crown suspension which features a double cradle design. This critical crown clearance —at least 1¼ inches—is tamper proof. The upper cradle is fixed permanently for a built-in safety margin while the lower cradle adjusts to the wearer's own comfort.

Size adjustments are marked in head sizes and changes are simplified through a single collar button arrangement. Scientifically designed tabs and clips eliminate pressure points and permit easy removal and replacement of the suspension.

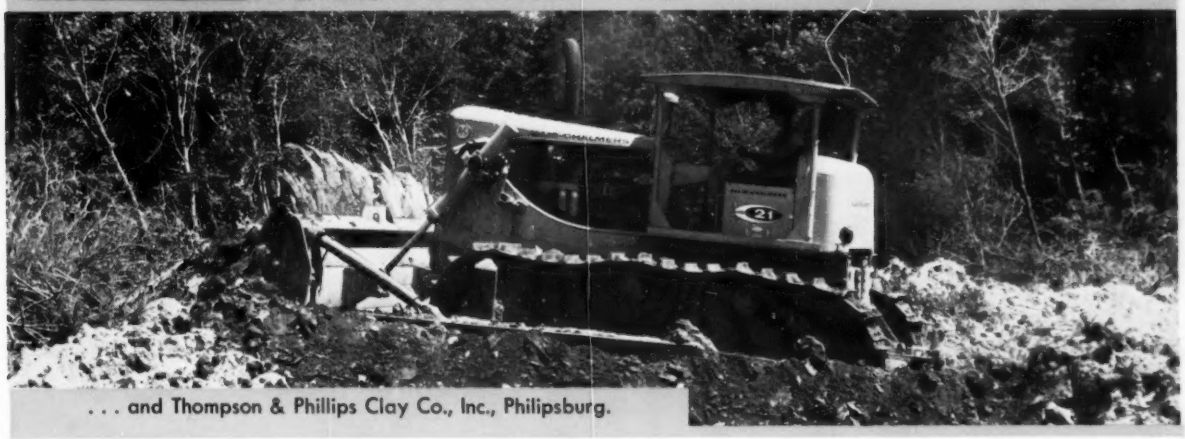


This new Vicon controlled Manitowoc dragline is stripping coal at Dewy Penoyer's operation in Clearfield County, Pa.

Allis-Chalmers HD-21 at C & K Coal Co., West Freedom.



. . . at Thompson Bros. Coal Co., Philipsburg.



. . . and Thompson & Phillips Clay Co., Inc., Philipsburg.

Amazing economy—as much as 27% less fuel consumption than other big tractors— minimum maintenance, freedom from downtime! These advantages have earned the new, redesigned Allis-Chalmers turbocharged 21000 its reputation as the world's "healthiest" engine.

And—this trouble-free engine is coupled to the tractor industry's finest torque converter —proved by almost 20 years of mining service.

Ask your Highway representative for HD-21 profit facts—today!

A-5276A

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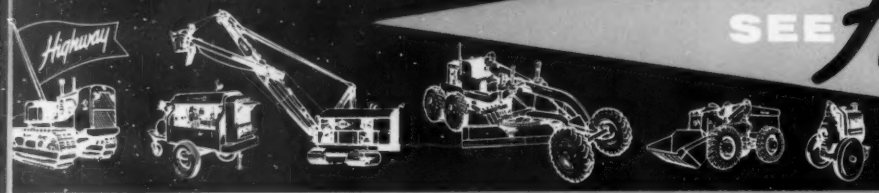

Highway sheds light on service problems

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